

Notice of Allowability

Application No.

08/575,433

Examiner

PHUC H. TRAN

Applicant(s)

HUANG, LISHENG

Art Unit

2616

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to Interview on 11/19/07.
2. ☒ The allowed claim(s) is/are 1,4-7,26,27,31,11,14-17,22,32,33,35-37,29,34,38,39 now renumbered as 1-23 respectively.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date 11/6/07;10/09/07
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☒ Interview Summary (PTO-413), Paper No./Mail Date 11/19/07.
7. ☒ Examiner's Amendment/Comment
8. ☐ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

DETAILED ACTION

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with John E. Harrity (Reg. No. 43367) on 11/19/07.

The application has been amended as follows:

- The specification has been replaced^{with} the paragraph starting on page 11, line 24 to page 14, line 11, with the following paragraph:

To implement the charge service and the dedicated service, the invention provides two respective protocols for processing calls within the hybrid telephony system. The first protocol is for the charge service and is illustrated in Figs. 5 and 6. The process of this protocol includes the following steps: (1) The caller first calls a local originating GC through a circuit-switched originating LEC from any telephone, and the caller's address (caller's telephone number) is relayed to the originating GC by the originating LEC. (2) The originating GC plays a voice prompt (a greeting message asking for input) to the caller asking for the callee's destination address (callee's telephone number). (3) The caller provides the address either through telephone keypad digits or through spoken digits which are recognized by the originating GC. (4) The originating GC resolves the call routing information in a manner similar to the Domain Name Service for the Internet, obtains the packet network address (such as the IP address of the

Internet) of the terminating GC, which is usually local to the callee (otherwise a toll call may be involved), and estimates the unit charge for a call going through that terminating GC. (5) The originating GC informs the caller about the charge rate, and asks for the caller's preferred payment method, such as by credit card, or through a prearranged calling card account. (6) The caller specifies the payment method either through keypad digits or through spoken digits which again are recognized by the originating GC (if this is a collect call, then the caller's spoken information about both parties is recorded and digitized to be announced later to the callee). (7) The originating GC validates the payment method through an internal or external database. (8) The originating GC sends a control message to the terminating GC, along with both party's addresses and, if the terminating GC does not know where to route the call or does not have the resources to serve the call, it responds with a negative acknowledgment and an alternative terminating GC is searched for and selected, or the caller is informed that the call can not be routed at that moment. (9) The terminating GC dials out to the callee through a circuit switched terminating LEC using the destination address it obtained from the originating GC. (10) If the call proceeds successfully through the terminating LEC, the terminating GC sends an acknowledgement back to the originating GC (or if the call proceeds unsuccessfully, such as due to busy telephone lines, the terminating GC sends this status to the originating GC in the form of a busy message). (11) The originating GC then passes the status of the acknowledgement back to the caller through the originating LEC, the effect being a ring back tone (or a busy tone). (12) The callee answers the call. (13) The terminating GC passes this state change to the originating GC, which may begin billing at that time. (14) The callee starts the conversation by greeting the caller. (15) The terminating GC either receives the digitized voice data stream over a digital

trunk or continuously digitizes all the voice signals over an analog trunk from the LEC which the callee is connected to, and, after possibly encrypting and compressing, packetizes the data into packet form, the packets then being sent over the packet-switched network to the originating GC.

(16) The originating GC, after possibly rearranging the packets to maintain proper packet order, unpacketizes the received data and, after possibly decompressing and decrypting, optionally converts the digitized data back to the voice signal if the connection with the LEC to which the caller is connected is analog. The digital or voice signal is then routed to the caller over the circuit-switched network of the originating LEC. (17) The same process as described in steps 14 through 16 is performed for the caller's voice in the opposite direction. The resulting processing in both directions supports the conversation between the two parties participating in the call.

Thus, during the conversation, the terminating circuit-switched network is capable of providing first return signals to the terminating gateway computer in response to return voice input, where the terminating gateway computer includes a component for converting the first return signals into packets of return digital data. At least one of the originating and terminating gateway computers includes a component for routing the return packets through the packet-switched network from the terminating gateway computer to the originating gateway computer. The originating gateway computer includes a component for converting the return packets into second return signals. The originating gateway computer also including an originating buffer component for storing the return packets prior to conversion thereof into the second return signals, and a component for rearranging the stored return packets to maintain a proper packet order.

- Cancel claims 9-10, 19-20, 28 and 30.

- Claim 1. (currently amended) A telecommunications system comprising:

an originating circuit-switched network for providing originating signals in response to voice input,

an originating gateway computer for converting said originating signals into digital data packets,

a terminating gateway computer that ~~accepts out of band signaling and~~ converts said digital data packets into terminating signals,

a terminating circuit-switched network for providing voice output in response to said terminating signals, and

a packet-switched network for transmitting said digital data packets from said originating gateway computer to said terminating gateway computer, at least one of said originating gateway computer or said terminating gateway computer comprising a component for routing said digital data packets through said packet-switched network from said originating gateway computer to said terminating gateway computer;

wherein said terminating circuit-switched network is capable of providing first return signals to said terminating gateway computer in response to return voice input,

wherein said terminating gateway computer comprises a component for converting said first return signals into return packets of return digital data,

wherein at least one of said originating gateway computer or said terminating gateway computer comprises a component for routing said return packets through said packet-switched network from said terminating gateway computer to said originating gateway computer,

[[and]] wherein said originating gateway computer comprises a component for converting said return packets into second return signals,

wherein said originating gateway computer comprises an originating buffer component for storing said return packets prior to conversion thereof into said second return signals, and

wherein said originating gateway computer further comprises a component for rearranging said stored return packets to maintain a proper packet order.

- Claim 11. (currently amended) A telecommunications system comprising:

an originating gateway computer for providing digital packets corresponding to originating signals produced in response to voice input,

a gateway computer that ~~accepts out-of-band signaling and~~ converts said digital packets into terminating signals,

a circuit-switched network for providing voice output in response to said terminating signals, and

a packet-switched network for transmitting said digital packets from said originating gateway computer to said gateway computer, at least one of said originating gateway computer or said gateway computer comprising a component for routing said digital packets through said packet-switched network from said originating gateway computer to said gateway computer;

wherein said circuit-switched network is capable of providing first return signals to said gateway computer,

wherein said gateway computer comprises a component for converting said first return signals into return packets of return digital data,

wherein at least one of said originating gateway computer or said gateway computer comprises a component for routing said return packets through said packet-switched network from said gateway computer to said originating gateway computer,

[[and]] wherein said originating gateway computer comprises a component for converting said return packets into second return signals,

wherein said originating network comprises a buffer component for storing said return packets prior to conversion thereof into said second return signals, and

wherein said originating network further comprises a component for rearranging said stored return packets to maintain a proper packet order.

- Claim 22. (currently amended) A telecommunications method comprising:

providing originating digital packets for transmission from an originating gateway computer, said originating digital packets corresponding to originating signals produced in response to originating voice input;

routing said originating digital packets from said originating gateway computer to a gateway computer, ~~that accepts out of band signaling~~, through a packet-switched network via an originating routing component in at least one of said originating gateway computer or said gateway computer;

converting said originating digital packets into terminating signals for transmission from said gateway computer;

transmitting said terminating signals through a circuit-switched network for providing terminating voice output in response to said terminating signals;

providing first return signals to said gateway computer in response to return voice input into said circuit-switched network;

converting said return signals into return digital packets of return digital data for transmission from said gateway computer;

routing said return digital packets through said packet-switched network from said gateway computer to said originating gateway computer using said originating routing component or another routing component in said originating gateway computer or said gateway computer;

storing the return digital packets in an originating buffer of the originating gateway computer prior to converting the return digital packets into second return signals;

rearranging the stored return digital packets to maintain a proper packet order;

and converting said return digital packets into the second return signals.

- Claim 29. (currently amended) A telecommunications system comprising:

an originating circuit-switched network for providing originating signals in response to voice input,

an originating gateway computer for converting said originating signals into digital data packets,

a terminating gateway computer that ~~accepts out-of-band signaling and~~ converts said digital data packets into terminating signals,

a terminating circuit-switched network for providing voice output in response to said terminating signals, and

a packet-switched network for transmitting said digital data packets from said originating gateway computer to said terminating gateway computer, at least one of said originating gateway computer or said terminating gateway computer comprising a component for routing said digital data packets through said packet-switched network from said originating gateway computer to said terminating gateway computer;

wherein said terminating circuit-switched network is capable of providing first return signals to said terminating gateway computer in response to return voice input,

wherein said terminating gateway computer comprises a component for converting said first return signals into return packets of return digital data,

wherein at least one of said originating gateway computer or said terminating gateway computer comprises a component for routing said return packets through said packet-switched network from said terminating gateway computer to said originating gateway computer,

wherein said originating gateway computer comprises a component for converting said return packets into second return signals,

wherein said originating network comprises a buffer component for storing said return packets prior to conversion thereof into said second return signals,

wherein said originating network further comprises a component for rearranging said stored return packets to maintain a proper packet order, and

wherein at least one of said originating gateway computer or said terminating gateway computer comprises a time-division multiplexing bus interconnecting at least one digital

trunk interface with a digital signal processor and an application-specific integrated circuit, and a system bus interconnecting said digital signal processor and said application-specific integrated circuit with a central processing unit and a random access memory.

- Claim 34. (currently amended) A telecommunications method comprising:

providing originating digital packets for transmission from an originating gateway computer, said originating digital packets corresponding to originating signals produced in response to originating voice input;

routing said originating digital packets from said originating gateway computer to a gateway computer, ~~that accepts out of band signaling~~, through a packet-switched network via an originating routing component in at least one of said originating gateway computer or said gateway computer;

converting said originating digital packets into terminating signals for transmission from said gateway computer;

transmitting said terminating signals through a circuit-switched network for providing terminating voice output in response to said terminating signals;

providing first return signals to said gateway computer in response to return voice input into said circuit-switched network;

converting said return signals into return digital packets of return digital data for transmission from said gateway computer;

routing said return digital packets through said packet-switched network from said gateway computer to said originating gateway computer using said originating routing

component or another routing component in said originating gateway computer or said gateway computer;

storing the return digital packets in an originating buffer of the originating gateway computer prior to converting the return digital packets into second return signals;

rearranging the stored return digital packets to maintain a proper packet order;

converting said return digital packets into the second return signals;

estimating a unit charge for a call going through said gateway computer;

informing a caller providing said originating voice input about the unit charge;

and

recording a payment method specified by the caller before providing said terminating voice output.

- Claim 38. (currently amended) A method ~~for establishing a call connection, the~~ method comprising:

receiving, at a first gateway device, a destination address of a called device from a calling device over a first circuit-switched network;

transmitting, in response to receiving the destination address, a connection request from the first gateway device to a second gateway device over a packet-switched network, ~~at least one of the first gateway device or the second gateway device accepting out of band~~ signaling;

connecting, via the second gateway device, to the called device through a second circuit-switched network using the destination address; [[and]]

establishing a call connection between the calling device and the called device through the first circuit-switched network, the packet-switched network, and the second circuit-switched network in response to the connecting;

receiving, at the second gateway device, first signals in response to voice input into the circuit-switched network from the called device;

converting, via the second gateway device, the first signals into first packets;

transmitting, via the second gateway device, the first packets to the first gateway device over the packet-switched network;

storing, at an origination buffer in the first gateway device, the first packets prior to converting the first packets into second signals;

rearranging, via the first gateway device, the stored first packets to maintain a proper packet order;

converting, via the first gateway device, the first packets into the second signals;

and

transmitting, via the first gateway device, the second signals toward the calling device.

Allowable Subject Matter

2. Claims 1, 4-7, 11, 14-17, 22, 26, 27, 29, 31-39 are allowed.

Conclusion


Any inquiry concerning this communication or earlier communications from the examiner should be directed to PHUC H. TRAN whose telephone number is (571) 272-3172. The examiner can normally be reached on M-F (8-4:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, CHI PHAM can be reached on (571) 272-3179. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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